

Human Anatomy and Physiology

Curriculum Content Frameworks

**Please note: All assessment questions will be
taken from the knowledge portion of these
frameworks.**

Prepared by

Jonathan Bibb, Program Advisor
Doris Soenke, Secretary

Facilitated by

Karen Chisholm, Program Manager
Office of Assessment and Curriculum
Arkansas Department of Workforce Education

Edited by

Tina Crook, Clinical Instructor, University of Central Arkansas
Barbara Roach, Director, Nursing Services, Arkansas Rehabilitation Services
Dick Burchett, Program Manager
Jonathan Bibb, Program Advisor
Office of Skilled and Technical Sciences/Technical and Professional
Arkansas Department of Workforce Education

Disseminated by

Career and Technical Education
Office of Assessment and Curriculum
Arkansas Department of Workforce Education

Curriculum Content Frameworks

Human Anatomy and Physiology

Grade Levels: 9-12 Course Code: 495300	Prerequisite: None
Course Description: This course focuses on anatomical and physiological systems of the body as well as the diseases of those systems.	

Table of Contents

	Page
Unit 1: Structure of the Human Body	1
Unit 2: Integumentary System	3
Unit 3: Skeletal System	6
Unit 4: Muscular System	9
Unit 5: Circulatory System	14
Unit 6: Lymphatic System	18
Unit 7: Nervous System	20
Unit 8: Sensory System	24
Unit 9: Respiratory System	28
Unit 10: Digestive System	30
Unit 11: Urinary System	32

Unit 12: Endocrine System	35
Unit 13: Reproductive System	38
Unit 14: Career and Technical Student Organizations (SkillsUSA/HOSA)	41
Glossary	46

Unit 1: Structure of the Human Body

Hours: 6

Terminology: Cell, Endocytosis, Exocytosis, Meiosis, Microscopic, Mitosis, Organ, Phagocytosis, Pinocytosis, System, Tissue

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge		Application	Skill Group	Skill	Description
1.1	Define terminology related to the structure of the human body	1.1.1 Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
				Writing	Applies/Uses technical words and concepts [1.6.4]
					Uses words appropriately [1.6.21]
1.2	Identify the structure of a typical cell	1.2.1 Label parts of a cell	Foundation	Reading	Interprets drawings to obtain factual information [1.3.17]
		1.2.2 View prepared slides of various cells using a microscope		Science	Applies knowledge to complete a practical task [1.4.3]
				Writing	Applies/Uses technical words and concepts [1.6.4]
			Personal Management	Responsibility	Pays close attention to details [3.4.8]
			Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]
1.3	Identify the functions of each cell structure	1.3.1 List the functions of each cell structure	Foundation	Science	Describes/Explains scientific principles related to biology [1.4.13]
		1.3.2 Match functions to each cell structure			
1.4	Discuss the stages of cell division	1.4.1 List and describe the stages of mitosis and meiosis	Foundation	Science	Describes/Explains scientific principles related to biology [1.4.13]
		1.4.2 Illustrate the stages of mitosis and meiosis	Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do			What the Instruction Should Reinforce			
Knowledge		Application	Skill Group	Skill	Description	
1.5	Explore the processes that move materials in and out of cells	1.5.1	Describe the process of endocytosis	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
		1.5.2	Describe the process of exocytosis			Draws conclusions from what is read [1.3.12]
		1.5.3	Differentiate between pinocytosis and phagocytosis		Science	Applies scientific principles related to biology [1.4.5]
				Speaking	Participates in conversation, discussion, and group presentations [1.5.8]	
1.6	Discuss the relationship of cells, tissue, organs, and systems	1.6.1	Differentiate among cells, tissue, organs, and systems	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
		1.6.2	Develop a flow chart showing the relationship of cells, tissue, organs, and systems	Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]
1.7	Identify the body parts	1.7.1	Label the body parts	Foundation	Science	Describes/Explains scientific principles related to biology [1.4.13]
1.8	Match directional terms with correct descriptions	1.8.1	List and define terms	Foundation	Listening	Listens for content [1.2.3]
					Science	Describes/Explains scientific principles related to biology [1.4.13]
1.9	Identify body cavities and the main organs found in each cavity	1.9.1	Demonstrate the ability to label body cavities and the organs on an anatomical model (torso)	Foundation	Reading	Interprets drawings to obtain factual information [1.3.17]
					Science	Applies knowledge to complete a practical task [1.4.3]
					Writing	Applies/Uses technical words and concepts [1.6.4]
				Personal Management	Responsibility	Pays close attention to details [3.4.8]
				Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]
1.10	Name the abdominal regions	1.10.1	Label the abdominal regions	Foundation	Science	Applies knowledge to complete a practical task [1.4.3]
					Writing	Applies/Uses technical words and concepts [1.6.4]

Unit 2: Integumentary System

Hours: 8.5

Terminology: Dermis, Epidermis, Integumentary, Kertin, Melanin, Melanocyte, Pigmentation, Skin

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS				
What the Student Should be Able to Do		What the Instruction Should Reinforce				
Knowledge		Application		Skill Group	Skill	Description
2.1	Define terminology related to the integumentary system	2.1.1	Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
					Writing	Applies/Uses technical words and concepts [1.6.4]
						Uses words appropriately [1.6.21]
2.2	Identify the functions of the skin	2.2.1	List and describe the functions of the skin	Foundation	Reading	Comprehends written information for main ideas [1.3.7]
					Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
					Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
				Thinking	Reasoning	Comprehends ideas and concepts related to the skin [4.5.2]
2.3	Describe the layers of the skin	2.3.1	Label the layers of the skin on a diagram	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
		2.3.2	Differentiate among the layers of the skin		Science	Applies knowledge to complete a practical task [1.4.3]
					Writing	Applies/Uses technical words and concepts [1.6.4]

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge		Application	Skill Group	Skill	Description
2.4	Identify the appendages of the skin	2.4.1	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
		2.4.2			Comprehends written information for main ideas [1.3.7]
				Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
			Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]	
			Thinking	Reasoning	Comprehends ideas and concepts related to skin appendages [4.5.2]
2.5	Explore causes of abnormal skin colors	2.5.1	Foundation	Reading	Draws conclusions from what is read [1.3.12]
					Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
				Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
			Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]	
			Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]
2.6	Explore skin eruptions	2.6.1	Foundation	Reading	Draws conclusions from what is read [1.3.12]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
2.7 Describe common disorders of the skin	2.7.1	Research a disorder of the skin	Foundation	Listening	Listens for content [1.2.3]
	2.7.2	Discuss the diagnostic procedures of the skin		Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
	2.7.3	List preventive measures against skin cancer		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
	2.7.4	List signs and symptoms of skin cancer		Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
2.8 Explore care of skin, nails, and hair			Thinking	Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
				Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]
				Reading	Comprehends written information for main ideas [1.3.7]
				Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
2.8 Explore care of skin, nails, and hair	2.8.1	Analyze the structure and function of skin, hair, and nail care products	Thinking	Writing	Presents own opinion in written form in a clear, concise manner [1.6.14]
				Problem solving	Draws conclusions from observations, evaluates conditions, and gives possible solutions [4.4.5]

Unit 3: Skeletal System

Hours: 8.5

Terminology: Appendicular skeleton, Axial skeleton, Cancellous bone, Compact bone, Foramen, Fracture, Joints, Ossification, Osteon, Synovial fluid, Tendons

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do			What the Instruction Should Reinforce			
Knowledge		Application	Skill Group	Skill	Description	
3.1	Define terminology related to the skeletal system	3.1.1	Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
					Writing	Applies/Uses technical words and concepts [1.6.4]
						Uses words appropriately [1.6.21]
3.2	List the functions of the skeletal system	3.2.1	List and describe the functions of the skeletal system	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
		3.2.2	List the major parts of the skeletal system		Science	Applies scientific principles related to human anatomy and physiology [1.4.5]
					Writing	Applies/Uses technical words and concepts [1.6.4]
3.3	Describe the structure and formation of bone	3.3.1	Label the structure of bone, using a diagram	Foundation	Listening	Listens for content [1.2.3]
		3.3.2	Discuss the formation of bone beginning with infancy and ending with adulthood		Science	Applies knowledge to complete a practical task [1.4.3]
						Describes/Explains scientific principles related to biology [1.4.13]
		3.3.4	List factors that contribute to bone loss		Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
		Writing	Applies/Uses technical words and concepts [1.6.4]			

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS				
What the Student Should be Able to Do		What the Instruction Should Reinforce				
Knowledge		Application		Skill Group	Skill	Description
3.4	Identify types of bones	3.4.1	Label the parts of a long bone	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
		3.4.2	Differentiate between long and short bones		Science	Applies knowledge to complete a practical task [1.4.3]
					Writing	Applies/Uses technical words and concepts [1.6.4]
3.5	Explore axial and appendicular skeletons	3.5.1	Label bones of the axial and appendicular skeletons	Foundation	Science	Applies knowledge to complete a practical task [1.4.3]
					Writing	Applies/Uses technical words and concepts [1.6.4]
3.6	Identify the different types of joints	3.6.1	List and describe the different types of joints	Foundation	Listening	Listens for content [1.2.3]
		3.6.2	Label the different types of joints, using a skeleton		Science	Applies knowledge to complete a practical task [1.4.3]
					Writing	Describes/Explains scientific principles related to biology [1.4.13]
					Applies/Uses technical words and concepts [1.6.4]	

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do			What the Instruction Should Reinforce			
Knowledge		Application	Skill Group	Skill	Description	
3.7	Differentiate among types of bone fractures	3.7.1	Foundation	Reading	Comprehends written information for main ideas [1.3.7]	
		3.7.2		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]	
				Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]	
				Thinking	Reasoning	Comprehends ideas and concepts related to the skeletal system [4.5.2]
			Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]		
3.8	Explore bone and joint injuries and disorders	3.8.1	Foundation	Reading	Comprehends written information for main ideas [1.3.7]	
		3.8.2			Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]	
		3.8.3	Thinking	Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]	
				Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]	
			Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]		
			Reasoning	Comprehends ideas and concepts related to the skeletal system [4.5.2]		

Unit 4: Muscular System

Hours: 8.5

Terminology: Cardiac muscle, Fascia, Muscle, Smooth muscle, Striated muscle, Tendon

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS				
What the Student Should be Able to Do		What the Instruction Should Reinforce				
Knowledge		Application		Skill Group	Skill	Description
4.1	Define terminology related to the muscular system	4.1.1	Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
					Writing	Applies/Uses technical words and concepts [1.6.4]
						Uses words appropriately [1.6.21]
4.2	Identify the functions of muscles	4.2.1	List and describe the functions of muscles	Foundation	Listening	Listens for content [1.2.3]
					Science	Describes/Explains scientific principles related to biology [1.4.13]
4.3	Describe the types of muscles	4.3.1	List and describe the different types of muscles	Foundation	Listening	Listens for content [1.2.3]
		4.3.2	Give examples of each type of muscle		Science	Describes/Explains scientific principles related to biology [1.4.13]
					Speaking	Participates in conversation, discussion, and group presentations [1.5.8]

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS				
What the Student Should be Able to Do			What the Instruction Should Reinforce				
Knowledge		Application	Skill Group	Skill	Description		
4.4	Identify the characteristics of muscles	4.4.1	Describe the characteristics of muscles	Foundation	Reading	Comprehends written information for main ideas [1.3.7]	
		4.4.2			Label and illustrate the components that make up muscle	Science	Applies knowledge to complete a practical task [1.4.3]
		4.4.3				Discuss striated and nonstriated muscles	Speaking
					Writing		Applies/Uses technical words and concepts [1.6.4] Presents answers/conclusions in a clear and understandable form [1.6.13]
			Thinking	Reasoning	Comprehends ideas and concepts related to muscles [4.5.2]		
4.5	Discuss voluntary and involuntary muscles	4.5.1	Differentiate between voluntary and involuntary muscles	Foundation	Listening	Listens for content [1.2.3]	
		4.5.2			Give examples of voluntary and involuntary muscles	Reading	Applies information and concepts derived from printed materials [1.3.3]
			Science			Describes/Explains scientific principles related to anatomy and physiology [1.4.13]	
			Speaking			Participates in conversation, discussion, and group presentations [1.5.8]	

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS				
What the Student Should be Able to Do		What the Instruction Should Reinforce				
Knowledge		Application		Skill Group	Skill	Description
4.6	Explain the attachment of muscle to bone	4.6.1	Describe a tendon	Foundation	Reading	Comprehends written information for main ideas [1.3.7]
		4.6.2	Label various tendons, using a diagram		Science	Applies knowledge to complete a practical task [1.4.3] Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
					Writing	Applies/Uses technical words and concepts [1.6.4] Presents answers/conclusions in a clear and understandable form [1.6.13]
				Thinking	Reasoning	Comprehends ideas and concepts related to tendons [4.5.2]
4.7	Explain the arrangement and movement of muscles in pairs	4.7.1	Demonstrate the movement of pairs of muscles	Foundation	Listening	Listens to follow directions [1.2.6]
					Reading	Applies information and concepts derived from printed materials [1.3.3]
					Science	Describes/Explains scientific principles related to anatomy and physiology [1.4.13]
					Speaking	Communicates a thought, idea, or fact in spoken form [1.5.5]
			Personal Management	Responsibility	Pays close attention to details [3.4.8]	
		Thinking	Reasoning	Applies rules and principles to a new situation [4.5.1]		

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
4.8 Describe movements performed by muscles	4.8.1	Demonstrate muscle movements	Foundation	Listening	Listens to follow directions [1.2.6]
	4.8.2	Practice active and passive range of motion exercises		Reading	Applies information and concepts derived from printed materials [1.3.3]
				Science	Applies knowledge to complete a practical task [1.4.3] Describes/Explains scientific principles related to anatomy and physiology [1.4.13]
				Speaking	Communicates a thought, idea, or fact in spoken form [1.5.5]
			Personal Management	Responsibility	Pays close attention to details [3.4.8]
4.9 Identify the principal muscles of the body			Thinking	Reasoning	Applies rules and principles to a new situation [4.5.1] Comprehends ideas and concepts related to anatomy and physiology [4.5.2]
	4.9.1	Label the principal muscles	Foundation	Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
	4.9.2	Research different sports to determine which muscles are used		Science	Applies knowledge to complete a practical task [1.4.3] Describes/Explains scientific principles related to biology [1.4.13]
	4.9.3	Explore the effect of exercise and sport training on muscles		Writing	Applies/Uses technical words and concepts [1.6.4] Presents answers/conclusions in a clear and understandable form [1.6.13]
			Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge		Application	Skill Group	Skill	Description
4.10 Explore muscle disorders and injuries	4.10.1	Research an assigned muscle disorder	Foundation	Listening	Listens for content [1.2.3]
	4.10.2	List and describe the more common muscle injuries		Reading	Comprehends written information for main ideas [1.3.7]
	4.10.3	Describe standard treatments for muscle injuries			Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
			Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]	
			Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]	
	Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]		
Reasoning		Comprehends ideas and concepts related to muscle disorders and injuries [4.5.2]			

Unit 5: Circulatory System

Hours: 8.5

Terminology: Arteries, Blood pressure, Capillaries, Osmotic pressure, Plasma, Serum, Veins

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS				
What the Student Should be Able to Do		What the Instruction Should Reinforce				
Knowledge		Application		Skill Group	Skill	Description
5.1	Define terminology related to the circulatory system	5.1.1	Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
					Writing	Applies/Uses technical words and concepts [1.6.4]
						Uses words appropriately [1.6.21]
5.2	Identify the functions of the circulatory system	5.2.1	List and describe the functions of the circulatory system	Foundation	Listening	Listens for content [1.2.3]
					Science	Describes/Explains scientific principles related to biology [1.4.13]
5.3	Describe the parts of the circulatory system	5.3.1	Label a diagram of the circulatory system	Foundation	Science	Applies knowledge to complete a practical task [1.4.3]
					Writing	Applies/Uses technical words and concepts [1.6.4]

CAREER and TECHNICAL SKILLS				ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do				What the Instruction Should Reinforce		
Knowledge		Application		Skill Group	Skill	Description
5.4	Identify the functions of heart structures	5.4.1	Examine an animal heart or model of the human heart	Foundation	Reading	Analyzes and applies what has been read to specific task [1.3.2]
		5.4.2	Match heart structures to their function			Draws conclusions from what is read [1.3.12]
		5.4.3	Discuss common disorders of the heart		Science	Applies knowledge to complete a practical task [1.4.3]
					Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
				Writing	Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]	
				Personal Management	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]
			Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]	
5.5	Describe the physiology of blood circulation	5.5.1	Trace the path of blood circulation through the body	Foundation	Reading	Analyzes and applies what has been read to specific task [1.3.2]
		5.5.2	Distinguish between high blood pressure and low blood pressure			Applies information and concepts derived from printed materials [1.3.3]
		5.5.3	Compare and contrast hydrostatic and osmotic pressure		Science	Applies knowledge to complete a practical task [1.4.3]
					Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
				Writing	Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]	
				Personal Management	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]
				Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
5.6 List types of blood vessels	5.6.1	Label the main arteries and veins	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
	5.6.2	Differentiate among an artery, vein, and capillary		Science	Applies knowledge to complete a practical task [1.4.3]
	5.6.3	Label the parts of a capillary bed		Writing	Applies/Uses technical words and concepts [1.6.4]
5.7 Describe the composition of blood	5.7.1	List the main components of blood	Foundation	Listening	Listens for content [1.2.3]
	5.7.2	List the components of plasma		Reading	Applies information and concepts derived from printed materials [1.3.3]
	5.7.3	Differentiate between plasma and serum		Science	Describes/Explains scientific principles related to biology [1.4.13]
5.8 Discuss blood types	5.8.1	List the different blood types	Foundation	Listening	Listens for content [1.2.3]
	5.8.2	Discuss antigen and antibody differences among the different blood types		Reading	Comprehends written information for main ideas [1.3.7]
	5.8.3	Discuss universal donor and universal recipient		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
	5.8.4	Describe the process of blood transfusion		Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
	5.8.5	Discuss how the Rh factor relates to blood types	Thinking	Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
				Reasoning	Comprehends ideas and concepts related to blood types [4.5.2]

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS						
What the Student Should be Able to Do			What the Instruction Should Reinforce						
Knowledge		Application	Skill Group	Skill	Description				
5.9	Describe the blood-clotting process	5.9.1	List the components involved in blood clotting	Foundation	Listening	Listens for content [1.2.3]			
		5.9.2			Describe the blood-clotting process	Reading	Comprehends written information for main ideas [1.3.7]		
						5.9.3	List factors that promote or prevent blood clotting	Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
								Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
			Thinking	Reasoning	Comprehends ideas and concepts related to the blood-clotting process [4.5.2]				
5.10	Explore disorders of the circulatory system	5.10.1	Explore diagnostic procedures of the circulatory system	Foundation	Listening	Listens for content [1.2.3]			
		5.10.2			Research an assigned disorder of the circulatory system	Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]		
						5.10.3	List and describe common disorders of the circulatory system	Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
								Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
				Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]			

Unit 6: Lymphatic System

Hours: 8.5

Terminology: Antibody, Antigen, Immunity, Lymph, Vaccination

CAREER and TECHNICAL SKILLS				ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do				What the Instruction Should Reinforce		
Knowledge		Application		Skill Group	Skill	Description
6.1	Define terminology related to the lymphatic system	6.1.1	Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
					Writing	Applies/Uses technical words and concepts [1.6.4]
						Uses words appropriately [1.6.21]
6.2	Identify the functions of the lymphatic system	6.2.1	List and describe the functions of the lymphatic system	Foundation	Listening	Listens for content [1.2.3]
					Science	Describes/Explains scientific principles related to biology [1.4.13]
6.3	Describe the structures of the lymphatic system and their functions	6.3.1	Label a diagram of the lymphatic system	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
		6.3.2	Match structures to their functions			Draws conclusions from what is read [1.3.12]
6.4	List the different types of immunity	6.4.1	Describe the different types of immunity	Foundation	Listening	Listens for content [1.2.3]
		6.4.2	Give examples of the different types of immunity		Reading	Comprehends written information for main ideas [1.3.7]
		6.4.3	Describe the purpose of vaccinations			Draws conclusions from what is read [1.3.12]
		6.4.4	Describe the initial immune response		Science	Describes/Explains scientific principles related to anatomy and physiology [1.4.13]
					Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
					Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
				Thinking	Reasoning	Comprehends ideas and concepts related to immunity [4.5.2]

CAREER and TECHNICAL SKILLS				ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do				What the Instruction Should Reinforce		
Knowledge		Application		Skill Group	Skill	Description
6.5	Discuss Acquired Immunodeficiency Syndrome	6.5.1	Discuss measures to prevent transmission and acquisition of the human immunodeficiency virus [HIV] for public and health care professionals	Foundation	Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
6.6	Explore disorders of the lymphatic system	6.6.1	Research an assigned disorder of the lymphatic system	Foundation	Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
		6.6.2	List and describe common disorders of the lymphatic system		Science	Describes/Explains scientific principles related to biology [1.4.13]
					Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
				Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]

Unit 7: Nervous System

Hours: 8.5

Terminology: Cerebrospinal fluid, Cranial nerves, Effector, Motor neurons, Neuron, Reflex arc

CAREER and TECHNICAL SKILLS				ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do				What the Instruction Should Reinforce		
Knowledge		Application		Skill Group	Skill	Description
7.1	Define terminology related to the nervous system	7.1.1	Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
					Writing	Applies/Uses technical words and concepts [1.6.4]
						Uses words appropriately [1.6.21]
7.2	Describe the functions of the nervous system	7.2.1	List and describe the functions of the nervous system	Foundation	Listening	Listens for content [1.2.3]
					Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
7.3	Outline the parts and functions of neurons	7.3.1	Identify the parts of a neuron	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
		7.3.2	Match the parts of a neuron to their functions			Draws conclusions from what is read [1.3.12]
		7.3.3	Differentiate between sensory and motor neurons			Speaking
		7.3.4	Discuss Na/K pump in impulse transmission	Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]
		7.3.5	Illustrate the conduction of a nerve impulse between two neurons			

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
7.4 Discuss the main divisions of the nervous system	7.4.1	Contrast the actions of the divisions of the nervous system	Foundation Thinking	Reading	Applies information and concepts derived from printed materials [1.3.3] Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
	7.4.2	Develop a flow chart showing the divisions of the nervous system		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
				Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
				Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]
7.5 Outline the parts of the brain and their functions	7.5.1	Label a diagram of the brain	Foundation	Reading	Draws conclusions from what is read [1.3.12]
	7.5.2	Match the parts of the brain to their functions		Science	Applies knowledge to complete a practical task [1.4.3]
	7.5.3	Discuss how "handedness" is related to brain functions		Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
				Writing	Applies/Uses technical words and concepts [1.6.4]
7.6 Outline the structures and functions of the spinal cord	7.6.1	Label the parts of the spinal cord	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3] Draws conclusions from what is read [1.3.12]
	7.6.2	Match the parts of the spinal cord to their functions		Science	Applies knowledge to complete a practical task [1.4.3]
	7.6.3	Differentiate among regions of the spinal column		Writing	Applies/Uses technical words and concepts [1.6.4]

CAREER and TECHNICAL SKILLS				ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do				What the Instruction Should Reinforce		
Knowledge		Application		Skill Group	Skill	Description
7.7	Discuss cerebrospinal fluid	7.7.1	Describe the functions of cerebrospinal fluid	Foundation	Reading	Comprehends written information for main ideas [1.3.7]
		7.7.2	Discuss the diagnostic procedures utilizing cerebrospinal fluid		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
					Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
					Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
			Thinking	Reasoning	Comprehends ideas and concepts related to cerebrospinal fluid [4.5.2]	
7.8	Describe the functions of the cranial and spinal nerves	7.8.1	Differentiate between functions of cranial and spinal nerves	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
						Draws conclusions from what is read [1.3.12]
7.9	Explain reflex arc	7.9.1	Demonstrate reflex action	Foundation	Listening	Listens to follow directions [1.2.6]
					Reading	Applies information and concepts derived from printed materials [1.3.3]
						Draws conclusions from what is read [1.3.12]
					Science	Describes/Explains scientific principles related to anatomy and physiology [1.4.13]
				Speaking	Communicates a thought, idea, or fact in spoken form [1.5.5]	
				Personal Management	Responsibility	Pays close attention to details [3.4.8]
	Thinking	Reasoning	Applies rules and principles to a new situation [4.5.1]			

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
7.10 Explore disorders and injuries of the nervous system	7.10.1 Investigate ways to prevent injuries to the nervous system	Foundation	Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
	7.10.2 Research an assigned disorder of the nervous system		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
	7.10.3 Research current advancements in the treatment of spinal cord injuries		Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
		Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]

Unit 8: Sensory System

Hours: 8.5

Terminology: Cochlea, Cornea, Iris, Perception, Pupil, Retina, Sclera, Sensation, Taste bud

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
8.1 Define terminology related to the sensory system	8.1.1	Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
				Writing	Applies/Uses technical words and concepts [1.6.4] Uses words appropriately [1.6.21]
8.2 Identify the functions of the sensory system	8.2.1	List and describe the functions of the sensory system	Foundation	Listening	Listens for content [1.2.3]
	8.2.2	List the organs associated with the sensory system		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
8.3 Identify the five main senses	8.3.1	List the five main senses	Foundation	Listening	Listens for content [1.2.3]
	8.3.2	Match the senses to the parts of the brain responsible for interpreting their signals		Reading	Draws conclusions from what is read [1.3.12]
				Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
8.4 Discuss why stimulation of a sense organ results in sensation	8.4.2	Describe the process of sensation	Foundation	Reading	Comprehends written information for main ideas [1.3.7] Draws conclusions from what is read [1.3.12]
				Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
				Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
			Thinking	Reasoning	Comprehends ideas and concepts related to the sensory organs [4.5.2]

CAREER and TECHNICAL SKILLS				ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do				What the Instruction Should Reinforce		
Knowledge		Application		Skill Group	Skill	Description
8.5 Identify the parts of the eye and their functions	8.5.1	Label the parts of the eye	Foundation	Reading	Analyzes and applies what has been read to specific task [1.3.2]	
	8.5.2	Trace the path of light as it moves through the eye			Comprehends written information for main ideas [1.3.7]	
	8.5.3	Describe common disorders of the eye			Draws conclusions from what is read [1.3.12]	
	8.5.4	Match the parts of the eye to their corresponding functions				
			Science	Applies knowledge to complete a practical task [1.4.3]		
				Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]		
			Writing	Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]		
				Presents answers/conclusions in a clear and understandable form [1.6.13]		
		Personal Management	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]		
		Thinking	Reasoning	Comprehends ideas and concepts related to the eye [4.5.2]		
			Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]		

CAREER and TECHNICAL SKILLS				ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do				What the Instruction Should Reinforce		
Knowledge		Application		Skill Group	Skill	Description
8.6	Outline the parts of the ear and their functions	8.6.1	Label the parts of the ear	Foundation	Reading	Analyzes and applies what has been read to specific task [1.3.2]
		8.6.2	Trace the path of sound as it moves through the ear			Comprehends written information for main ideas [1.3.7]
		8.6.3	Match the parts of the ear to their corresponding functions			Draws conclusions from what is read [1.3.12]
		8.6.4	Describe common disorders of the ear		Science	Applies knowledge to complete a practical task [1.4.3]
		Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]				
		Writing		Applies/Uses technical words and concepts [1.6.4]		
				Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]		
				Presents answers/conclusions in a clear and understandable form [1.6.13]		
		Personal Management	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]		
		Thinking	Reasoning	Comprehends ideas and concepts related to the ear [4.5.2]		
			Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]		

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge		Application	Skill Group	Skill	Description
8.7	Discuss the senses of smell, taste, and touch	8.7.1 List and describe the senses of smell, taste, and touch	Foundation	Listening Science	Listens for content [1.2.3] Describes/Explains scientific principles related to biology [1.4.13]
8.8	Explore disorders of the sensory system	8.8.1 Simulate the loss of a sense 8.8.2 Research an assigned sensory system disorder	Foundation Thinking	Listening Reading Science Writing Knowing how to Learn	Listens for content [1.2.3] Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23] Describes/Explains scientific principles related to biology [1.4.13] Presents answers/conclusions in a clear and understandable form [1.6.13] Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]

Unit 9: Respiratory System

Hours: 8.5

Terminology: Alveolus, Breathing, Bronchus, Homeostasis, Larynx, Pharynx, Respiration, Trachea

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do			What the Instruction Should Reinforce			
Knowledge		Application	Skill Group	Skill	Description	
9.1	Define terminology related to the respiratory system	9.1.1	Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
					Writing	Applies/Uses technical words and concepts [1.6.4]
						Uses words appropriately [1.6.21]
9.2	Outline the functions of the respiratory system	9.2.1	List and describe the functions of the respiratory system	Foundation	Listening	Listens for content [1.2.3]
					Science	Describes/Explains scientific principles related to biology [1.4.13]
9.3	Identify the structures of the respiratory system and their functions	9.3.1	Label the parts of the respiratory system	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]
		9.3.2	Match the structures to their corresponding functions			Draws conclusions from what is read [1.3.12]
9.4	Discuss the process of breathing and respiration	9.4.1	List and describe the two types of respiration	Foundation	Listening	Listens for content [1.2.3]
		9.4.2	Illustrate the path of oxygen intake and carbon dioxide release through the respiratory system		Reading	Draws conclusions from what is read [1.3.12]
					Science	Describes/Explains scientific principles related to biology [1.4.13]
		9.4.3	List the factors affecting the respiratory rate		Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
		9.4.4	Discuss the role of the respiratory rate in maintaining homeostasis	Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge		Application	Skill Group	Skill	Description
9.5	Outline abnormal breathing conditions	9.5.1 Explore the effects of abnormal breathing conditions on the human body	Foundation	Listening Science	Listens for content [1.2.3] Describes/Explains scientific principles related to biology [1.4.13]
9.6	Explore common disorders of the respiratory system	9.6.1 Explore ways to care for the respiratory system and improve its functioning 9.6.2 Research an assigned disorder of the respiratory system 9.6.3 Discuss lifestyle and environmental factors that contribute to the loss of respiratory function	Foundation Thinking	Reading Science Speaking Writing Knowing how to Learn	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23] Describes/Explains scientific principles related to human anatomy and physiology [1.4.13] Participates in conversation, discussion, and group presentations [1.5.8] Presents answers/conclusions in a clear and understandable form [1.6.13] Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]

Unit 10: Digestive System

Hours: 8.5

Terminology: Bile, Carbohydrate, Chyme, Digestion, Enzymes, Fat, Hormone, Hydrochloric acid, Mucus, Nutrient, Peristaltic waves, Protein

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
10.1 Define terminology related to the digestive system	10.1.1 Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
			Writing	Applies/Uses technical words and concepts [1.6.4]
				Uses words appropriately [1.6.21]
10.2 Outline the functions of the digestive system	10.2.1 List and describe the functions of the digestive system	Foundation	Listening	Listens for content [1.2.3]
			Science	Describes/Explains scientific principles related to biology [1.4.13]
10.3 Identify the structures of the digestive system and their functions	10.3.1 Label the parts of the digestive system	Foundation	Listening	Listens for content [1.2.3]
	10.3.2 Match structures to their corresponding functions		Reading	Draws conclusions from what is read [1.3.12]
	10.3.3 List the digestive enzymes		Science	Applies knowledge to complete a practical task [1.4.3]
	10.3.4 List the digestive hormones		Writing	Describes/Explains scientific principles related to biology [1.4.13] Applies/Uses technical words and concepts [1.6.4]
10.4 Name the accessory organs of digestion	10.4.1 List the digestive accessory organs, and explain their corresponding functions	Foundation	Listening	Listens for content [1.2.3]
			Reading	Draws conclusions from what is read [1.3.12]
			Science	Describes/Explains scientific principles related to biology [1.4.13]

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge		Application	Skill Group	Skill	Description
10.5	Outline the process of digestion	10.5.1	Foundation	Reading	Analyzes and applies what has been read to specific task [1.3.2]
		10.5.2		Science	Draws conclusions from what is read [1.3.12]
		10.5.3			Applies knowledge to complete a practical task [1.4.3]
			Writing	Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]	
			Personal Management	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]
		Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]	
10.6	Explore disorders of the digestive system	10.6.1	Foundation	Listening	Listens for content [1.2.3]
		10.6.2		Reading	Uses written resources [books, dictionaries, directories] to obtain factual information [1.3.23]
				Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
			Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]	
			Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]

Unit 11: Urinary System

Hours: 8.5

Terminology: Acidosis, Aldosterons, Alkalosis, Antidiuretic hormone (ADH), Micturition, Nephron, Renin-angiotensin system, Urine

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
11.1 Define terminology related to the urinary system	11.1.1 Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]	
			Writing	Applies/Uses technical words and concepts [1.6.4]	
				Uses words appropriately [1.6.21]	
11.2 Outline the functions of the urinary system	11.2.1 Describe the functions of the urinary system	Foundation	Reading	Comprehends written information for main ideas [1.3.7]	
	11.2.2 Discuss the urinary system's role in maintaining homeostasis		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]	
			Speaking	Participates in conversation, discussion, and group presentations [1.5.8]	
			Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]	
		Thinking	Reasoning	Comprehends ideas and concepts related to the urinary system [4.5.2]	
11.3 Identify the structures of the urinary system and their functions	11.3.1 Label the parts of the urinary system	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]	
	11.3.2 Match structures to their corresponding functions			Draws conclusions from what is read [1.3.12]	
11.4 Outline the functions of the parts of a nephron unit	11.4.1 Label the parts of a nephron unit	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3]	
	11.4.2 Match the parts of the nephron unit to their corresponding functions			Draws conclusions from what is read [1.3.12]	

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS				
What the Student Should be Able to Do			What the Instruction Should Reinforce				
Knowledge		Application	Skill Group	Skill	Description		
11.5	Discuss the process of urine formation	11.5.1	Trace the path of blood through the nephron	Foundation	Listening	Listens for content [1.2.3]	
		11.5.2			List the hormones that affect the concentration of urine	Reading	Analyzes and applies what has been read to specific task [1.3.2]
							Comprehends written information for main ideas [1.3.7]
		11.5.3	Describe the renin-angiotensin system	Science	Applies knowledge to complete a practical task [1.4.3]		
					Describes/Explains scientific principles related to biology [1.4.13]		
					Writing	Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]	
						Presents answers/conclusions in a clear and understandable form [1.6.13]	
Personal Management	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]					
	Thinking	Reasoning	Comprehends ideas and concepts related to the process of urine formation [4.5.2]				
		Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]				

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
11.6 Explain the process of micturition	11.6.1 Label the parts of the urinary system directly involved with micturition	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3] Draws conclusions from what is read [1.3.12]
11.7 Explore disorders of the urinary system	11.7.1 Research an assigned disorder of the urinary system	Foundation	Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
			Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
			Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
		Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]

Unit 12: Endocrine System

Hours: 8.5

Terminology: Endocrine glands, Endocrine system, Exocrine system, Steroid, Stress

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge		Application	Skill Group	Skill	Description
12.1 Define terminology related to the endocrine system	12.1.1 Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]	
			Writing	Applies/Uses technical words and concepts [1.6.4]	
				Uses words appropriately [1.6.21]	
12.2 Outline the functions of the endocrine system	12.2.1 Describe the functions of the endocrine system	Foundation	Listening	Listens for content [1.2.3]	
	12.2.2 Differentiate between the endocrine and exocrine systems		Reading	Applies information and concepts derived from printed materials [1.3.3]	
				Comprehends written information for main ideas [1.3.7]	
	12.2.3 Give examples of organs and hormones associated with the endocrine system		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]	
			Speaking	Participates in conversation, discussion, and group presentations [1.5.8]	
			Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]	
		Thinking	Reasoning	Comprehends ideas and concepts related to the skin appendages [4.5.2]	
12.3 Identify the structures of the endocrine system and their functions	12.3.1 Label the endocrine glands	Foundation	Reading	Draws conclusions from what is read [1.3.12]	
	12.3.2 Match structures to their corresponding hormones		Science	Applies knowledge to complete a practical task [1.4.3]	
				Writing	Applies/Uses technical words and concepts [1.6.4]

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
12.4 Identify the hormones of the endocrine system and their functions	12.4.1	Match hormones to their corresponding functions	Foundation Thinking	Reading	Draws conclusions from what is read [1.3.12] Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
	12.4.2	Develop a flow chart depicting the effects of hormones on other endocrine structures		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
				Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
				Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]
12.5 Outline the process of hormone regulation	12.5.1	Discuss negative and positive feedback mechanisms for various hormones	Foundation Thinking	Reading	Comprehends written information for main ideas [1.3.7]
	12.5.2	Describe negative and positive feedback mechanisms for various hormones		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
				Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
				Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
12.6 Describe the response of the endocrine system to stress	12.6.1	List the hormones involved during times of stress and their effects on the body	Foundation	Reasoning	Comprehends ideas and concepts related to the endocrine system [4.5.2]
	12.6.2	Discuss ill effects of prolonged stress		Science	Describes/Explains scientific principles related to biology [1.4.13]
				Speaking	Participates in conversation, discussion, and group presentations [1.5.8]

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
12.7 Outline the uses of hormones as medical treatments	12.7.1	Research the pros and cons of hormone/steroid treatments	Foundation	Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
				Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
				Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
			Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]
12.8 Explore disorders of the endocrine system	12.8.1	Explore the factors that can cause disorders of the endocrine system	Foundation	Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
				Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
				Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
			Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]
	12.8.2	Research an assigned endocrine disorder			

Unit 13: Reproductive System

Hours: 8.5

Terminology: Blastocyte, Fertility, Fertilization, Fraternal twins, Hormone replacement therapy, Infertility, Libido, Menstrual cycle, Ovarian follicle, Ovary, Pituitary gland, Reproduction, Sperm, STD, Testes, Uterus, Vagina

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do			What the Instruction Should Reinforce			
Knowledge		Application	Skill Group	Skill	Description	
13.1	Define terminology related to the reproductive system	13.1.1	Use terms appropriately in context	Foundation	Reading	Applies/Understands technical words that pertain to human anatomy and physiology [1.3.6]
					Writing	Applies/Uses technical words and concepts [1.6.4]
						Uses words appropriately [1.6.21]
13.2	Identify the structures of the male reproductive system and their functions	13.2.1	Label a diagram of the male reproductive system	Foundation	Listening	Listens for content [1.2.3]
		13.2.2	Trace the path of sperm in the male body		Reading	Analyzes and applies what has been read to specific task [1.3.2]
						Draws conclusions from what is read [1.3.12]
		13.2.3	Match structures of the male reproductive system to their corresponding functions		Science	Applies knowledge to complete a practical task [1.4.3]
		13.2.4	List secretions of the male reproductive system, and specify their origin		Describes/Explains scientific principles related to biology [1.4.13]	
				Writing	Applies/Uses technical words and concepts [1.6.4]	
					Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]	
				Personal Management	Responsibility	Maintains a high level of concentration in completion of a task [3.4.7]
		Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]		

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
13.3 Identify the structures of the female reproductive system and their functions	13.3.1	Label a diagram of the female reproductive system	Foundation	Reading	Draws conclusions from what is read [1.3.12]
	13.3.2	Match structures of the female reproductive system to their corresponding functions		Science	Applies knowledge to complete a practical task [1.4.3]
				Writing	Applies/Uses technical words and concepts [1.6.4]
13.4 Explain the phases of the menstrual cycle	13.4.1	Develop a chart depicting the menstrual cycle; include the different phases of the menstrual cycle and the changes occurring within the ovary, uterus, and pituitary gland	Foundation Thinking	Listening	Listens for content [1.2.3]
				Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
	13.4.2	List the hormones involved in the menstrual cycle, and describe their effects on the uterus and ovarian follicle		Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
13.5 Discuss the physiology of reproduction			Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]
	13.5.1	Explain the process of fertilization	Foundation	Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
	13.5.2	Illustrate the process of reproduction from ovulation to implantation of the blastocyst	Thinking	Seeing Things in the Mind's Eye	Organizes and processes images – symbols, pictures, graphs, objects, etc. [4.6.2]
	13.5.3	Discuss the development of identical and fraternal twins			
13.6 Outline the changes that occur during menopause	13.6.1	List the changes that occur to the following organs, systems, and traits in postmenopausal women: menstrual cycle, uterus, vagina, skin, cardiovascular system, vasomotor system, libido, fertility, and pituitary function	Foundation	Listening	Listens for content [1.2.3]
				Science	Describes/Explains scientific principles related to biology [1.4.13]
	13.6.2	Discuss the pros and cons of hormone replacement therapy		Speaking	Participates in conversation, discussion, and group presentations [1.5.8]

CAREER and TECHNICAL SKILLS				ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do				What the Instruction Should Reinforce		
Knowledge		Application		Skill Group	Skill	Description
13.7	Discuss sexually transmitted diseases [STDs]	13.7.1	Research ways to prevent the transmission of STDs	Foundation	Listening	Listens for content [1.2.3]
		13.7.2	List signs and symptoms of STDs		Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
		13.7.3	Discuss health risks associated with STDs		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
					Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
					Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
		Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]		
13.8	Explore disorders of the reproductive system	13.8.1	Discuss causes of infertility	Foundation	Reading	Uses written resources (books, dictionaries, directories) to obtain factual information [1.3.23]
		13.8.2	Debate the use of infertility drugs and treatments		Science	Describes/Explains scientific principles related to human anatomy and physiology [1.4.13]
		13.8.3	Research an assigned reproductive disorder		Speaking	Organizes ideas, and communicates oral messages to listeners [1.5.7]
						Participates in conversation, discussion, and group presentations [1.5.8]
					Writing	Presents answers/conclusions in a clear and understandable form [1.6.13]
		Thinking	Knowing how to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]		

Unit 14: Career and Technical Student Organizations (SkillsUSA/HOSA)

Hours: 12

Terminology: Assess, Assessment, Behavior, Business meeting, Career, Competency, Critique, Cultural diversity, Customer, Equity issue, Expectation, Government, Image, Interview, Job application, Journal, Management, Mentor, Organizational chart, Parliamentary procedure, Portfolio, Presentation, Professional organization, Résumé, Self-motivation, Short-term goals, Stress, Task, Trade union

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
14.1 Define terminology related to student organizations	14.1.1 Use terms appropriately in context		Foundation	Reading	Applies/Understands technical words that pertain to student organizations [1.3.6]
				Writing	Applies/Uses technical words and concepts [1.6.4]
					Uses words appropriately [1.6.21]
14.2 Outline a self-assessment, and identify individual learning styles	14.2.1 Show individual strengths		Interpersonal	Leadership	Conveys attitudes and values of group to others [2.4.3]
	14.2.2 Show areas in need of improvement		Thinking	Problem Solving	Identifies possible reasons for a problem [4.4.6]
14.3 Describe self-motivation techniques, and establish short-term goals	14.3.1 Prepare a list of short-term goals		Personal Management	Self-esteem	Develops/Initiates a plan for self-improvement [3.5.4]
	14.3.2 Discuss ways to change or improve lifestyle, appearance, and behavior		Thinking	Creative Thinking	Identifies new goals and objectives [4.1.8]
14.4 Give examples of individual time-management skills	14.4.1 Prepare and maintain a time journal		Foundation	Writing	Prepares a complex document in a concise manner [1.6.12]
	14.4.2 Outline ways to improve time-management skills		Thinking	Problem Solving	Devises and implements a plan of action to resolve a problem [4.4.3]
14.5 Predict future occupations	14.5.1 Research the Internet to explore career opportunities in specified fields of study		Foundation	Reading	Draws conclusions from what is read [1.3.12]
				Writing	Summarizes written information [1.6.17]
	14.5.2 Prepare a presentation on a specified career area		Personal Management	Career Awareness, Development, and Mobility	Explores career opportunities [3.1.6]
			Thinking	Creative Thinking	Prepares presentation based on subject research, interviews, surveys [4.1.10]

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
14.6 Identify the customer	14.6.1 Differentiate between external and internal customers	Interpersonal	Thinking	Customer Service	Recognizes effects of positive/negative attitudes on customers [2.3.7]
	14.6.2 Identify factors that contribute to poor customer relationships			Decision Making	Shows initiative and courtesy in meeting and working with customers [2.3.8] Evaluates information/data to make best decision [4.2.5]
14.7 Identify the benefits of doing a community service project	14.7.1 Outline ways to become involved in the community	Foundation	Interpersonal	Speaking	Organizes ideas, and communicates oral messages to listeners [1.5.7]
	14.7.2 Develop a community service project			Teamwork	Contributes to group with ideas, suggestions, and effort [2.6.2]
14.8 Describe effective communication with others	14.8.1 Note personal barriers to listening	Thinking		Problem Solving	Recognizes/Defines problem [4.4.8]
	14.8.2 Relate a personal plan to overcome barriers to listening				Revises plan of action indicated by findings [4.4.9]
14.9 Give locations for a shadowing activity	14.9.1 Summarize and relate an experience of job shadowing	Interpersonal		Leadership	Encourages/Motivates members of a group or team [2.4.6]
14.10 Identify the components of an employment portfolio	14.10.1 Present parts of a portfolio	Foundation		Writing	Completes form accurately [1.6.7]
	14.10.2 Compile a personal employment portfolio for an interview				Composes and creates documents – letters, manuals, reports, proposals, graphs, flow charts, etc. [1.6.8]
14.11 List proficiency in program competencies	14.11.1 Construct an interpersonal competency assessment	Foundation		Writing	Analyzes data, summarizes results, and makes conclusions [1.6.2]
14.12 Describe how to measure/modify short-term goals	14.12.1 Discuss how to pursue short-term goals	Thinking		Creative Thinking	Identifies new goals and objectives [4.1.8]
14.13 Identify stress sources	14.13.1 Prepare a list of personal stress sources	Foundation	Thinking	Writing	Communicates thoughts, ideas, or facts in written form in a clear, concise manner [1.6.6]
	14.13.2 Outline techniques to cope with individual sources of stress			Problem Solving	Demonstrates logical reasoning in reaching a conclusion [4.4.2]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge		Application	Skill Group	Skill	Description
14.14	Identify characteristics of a positive image	14.14.1 List behaviors and traits that lead to a positive image	Foundation	Reading	Determines what information is needed [1.3.10]
		14.14.2 Note behaviors and traits that lead to a negative image	Personal Management	Self-esteem	Comprehends the importance of a positive self-concept [3.5.1] Develops/Initiates a plan for self-improvement [3.5.4]
			Thinking	Decision Making	Identifies pros and cons to assist in decision-making process [4.2.7]
				Problem Solving	Demonstrates logical reasoning in reaching a conclusion [4.4.2]
14.15	Describe how team skills can be applied to a group project	14.15.1 Form a team to develop a class project	Interpersonal	Teamwork	Works effectively with others to reach a common goal [2.6.6]
14.16	Outline how to observe and critique a meeting	14.16.1 Attend a formal meeting held in the community	Foundation	Writing	Composes and creates documents – letters, manuals, reports, proposals, graphs, flow charts, etc. [1.6.8]
		14.16.2 Prepare a critique of the meeting attended	Interpersonal	Customer Service	Shows initiative and courtesy in meeting and working with customers [2.3.8]
14.17	List business meeting skills	14.17.1 Relate the basic rules required to ensure an orderly and business-like meeting	Foundation	Speaking	Organizes ideas and communicates oral messages to listeners [1.5.7]
		14.17.2 Demonstrate with role-playing appropriate meeting skills	Interpersonal	Leadership	Conveys attitudes and values of group to others [2.4.3] Influences group behavior [2.4.8]
14.18	Outline a survey for employment opportunities	14.18.1 Compile information on a particular employment opportunity of interest	Foundation	Writing	Presents own opinion in written form in a clear, concise manner [1.6.14]
		14.18.2 Perform an Internet search of a specific career area	Personal Management	Career Awareness, Development, and Mobility	Develops skills to locate, evaluate, and interpret career information [3.1.4]
14.19	Select a professional journal for review and develop a three- to five-minute presentation	14.19.1 Prepare a presentation on the content, purpose, and distribution of a particular professional journal	Foundation	Writing	Prepares a complex document in a concise manner [1.6.12]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
14.20 Identify customer expectations	14.20.1 List customer expectations 14.20.2 Discover the consequences of unmet customer expectations	Interpersonal	Customer Service	Applies human relations skills in real-life situations [2.3.1] Recognizes effects of positive/negative attitudes on customers [2.3.7] Works with customers to satisfy their expectations [2.3.9]
14.21 List parts of a job application	14.21.1 Prepare a job application from various businesses in the community 14.21.2 Demonstrate a mock job interview	Foundation	Reading Speaking Writing	Determines what information is needed [1.3.10] Communicates a thought, idea, or fact in spoken form [1.5.5] Uses verbal language and other cues, such as body language, appropriate in style, tone, and level of complexity to the audience and the occasion [1.5.14] Completes form accurately [1.6.7]
14.22 Outline your employment portfolio	14.22.1 Construct a personal employment portfolio	Foundation	Writing	Composes and creates documents – letters, manuals, reports, proposals, graphs, flow charts, etc. [1.6.8] Produces neat, legible document from typewriter or computer [1.6.15] Summarizes written information [1.6.17] Uses language, style, organization, and format appropriate to subject matter, purpose, and audience [1.6.19]
14.23 Identify supervisory and management roles in an organization	14.23.1 Prepare an organizational chart 14.23.2 Outline the responsibilities of managers and supervisors	Foundation Interpersonal Thinking	Writing Leadership Creative Thinking	Produces neat, legible document from typewriter or computer [1.6.15] Helps an individual or group challenge existing procedures, policies, or authority [2.4.7] Develops visual aids to create audience interest [4.1.4]

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
14.24 Outline safety issues	14.24.1 Research safety issues in a given career area	Foundation	Reading	Identifies relevant details, facts, and specifications [1.3.16]
			Science	Follows safety guidelines [1.4.15]
		Personal Management	Integrity/Honesty/Work Ethic	Follows established rules, regulations, and policies [3.2.5]

Glossary

Unit 1: Structure of the Human Body

1. Cell — the basic living unit of all plants and animals
2. Endocytosis — bulk uptake of material through the cell membrane by taking it into a vesicle
3. Exocytosis — the elimination of material from a cell through the formation of vesicles
4. Meiosis — a process of cell division that results in gametes; consists of two cell divisions that result in four cells, each of which contains half the number of chromosomes as the parent cell; occurs in testes and ovaries
5. Microscopic — too small to be seen by the unaided eye but large enough to be studied under a microscope
6. Mitosis — a division of the nucleus; process of cell division that results in two daughter cells with exactly the same number and type of chromosomes as the parent cell
7. Organ — part of the body composed of two or more tissue types and performing one or more specific functions
8. Phagocytosis — a process of ingestion and digestion by cells of substances such as other cells, bacteria, cell debris, and foreign particles
9. Pinocytosis — cell drinking; uptake of liquid by a cell
10. System — (in the human body) regarded as a functional physiological unit
11. Tissue — collection of cells with similar structure and function and the substances between the cells

Unit 2: Integumentary System

1. Dermis — the middle layer of the skin; a complex combination of blood vessels, hair follicles, and sebaceous (oil) glands
2. Epidermis — the outer layer of skin; made up of the horny layer, squamous cells, and basal cells
3. Integumentary — a natural outer covering or coat, such as the skin of an animal or the membrane enclosing an organ
4. Keratin — a strong, fibrous protein that is the major component of skin, hair, and nails
5. Melanin — the pigment produced by the body that gives skin and irises (the colored portion of the eye) their color; also helps protect the skin from the sun's damaging rays
6. Melanocyte — cells found mainly in the stratum basale of skin that produce the brown or black pigment melanin
7. Pigmentation — coloration of tissues by pigment
8. Skin — the membranous tissue forming the external covering or integument of an animal and consisting, in vertebrates, of the epidermis and dermis

Unit 3: Skeletal System

1. Appendicular skeleton — relating to an appendage, such as the limbs and their associated girdles
2. Axial skeleton — the bones constituting the head and trunk of a vertebrate body
3. Cancellous bone — bone with latticelike appearance; spongy bone
4. Compact bone — bone that is denser and has fewer spaces than cancellous bone
5. Foramen — a hole; referring to a hole or opening in a bone
6. Fracture — a break, rupture, or crack, especially in bone or cartilage
7. Joints — a point of articulation between two or more bones, especially such a connection that allows motion
8. Ossification — bone formation
9. Osteon — a single central canal with its contents and the associated concentric lamellae and osteocytes surrounding it; also called the *Haversian system*
10. Synovial fluid — a somewhat slippery viscus substance serving as a lubricant in movable joints
11. Tendons — cords of fibrous connective tissue that attach muscles to bones

Unit 4: Muscular System

1. Cardiac muscle — striated, involuntary muscle that is found only in the heart
2. Fascia — a sheet or thin band of fibrous tissue that covers muscles and some organs of the body
3. Muscle — a tissue composed of fibers capable of contracting to effect bodily movement
4. Smooth muscle — sometimes called *involuntary muscle* ; a type of muscle found many places in the body, including the walls of the airways; called smooth muscle simply because of how it looks under a microscope
5. Striated muscle — usually voluntary muscle made up of elongated, multinucleated, transversely striated muscle fibers, having principally bony attachments
6. Tendon — a tough connective tissue band connecting a muscle to bone

Unit 5: Circulatory System

1. Arteries — blood vessels that carry blood away from the heart
2. Blood pressure — the force blood exerts against the blood vessel walls; expressed relative to atmospheric pressure and reported in the form of millimeters of mercury (mm Hg) of pressure
3. Capillaries — minute blood vessels consisting only of simple squamous epithelium and a basement membrane; major site for the exchange of substances between the blood and tissues
4. Osmotic pressure — force required to prevent the movement of water across a selectively permeable membrane
5. Plasma — the fluid portion of the blood
6. Serum — the fluid portion of blood after the removal of fibrin and blood cells
7. Veins — the blood vessels that carry blood toward the heart

Unit 6: Lymphatic System

1. Antibody — protein found in the plasma that is responsible for humoral immunity; binds specifically to antigen
2. Antigen — any substance that induces a state of sensitivity or resistance to infection or toxic substances after a latent period; substance that stimulates the specific immune system
3. Immunity — resistance to infectious disease and harmful substances
4. Lymph — clear or yellowish fluid derived from interstitial fluid and found in lymph vessels
5. Vaccination — deliberate introduction of an antigen into a subject to stimulate the immune system and produce immunity to the antigen

Unit 7: Nervous System

1. Cerebrospinal fluid — fluid filling the ventricles and surrounding the brain and spinal cord
2. Cranial nerve — a nerve that originates from a nucleus within the brain; there are 12 pairs of cranial nerves
3. Effector — a muscle, gland, or organ capable of responding to a stimulus; a nerve ending that carries impulses to an effector
4. Motor neurons — neurons that innervate skeletal, smooth, or cardiac muscle fibers
5. Neuron — morphologic and functional unit of the nervous system, consisting of the nerve cell body, dendrites, and axon
6. Reflex arc — the neural path of a reflex

Unit 8: Sensory System

1. Cochlea — the snail-shaped cavity — approximately 1-1/4 inches long, 3/8 inches wide and 2 inches high — in the temporal bone that contains the basilar membrane that is the organ of hearing
2. Cornea — the clear part of the eye covering the iris and pupil; lets light into the eye, permitting sight
3. Iris — the colored muscular membrane that lies behind the cornea and in front of the lens, which, by opening or closing, determines the size of the pupil and hence the amount of light entering the eye
4. Perception — the neurological processes by which recognition and interpretation are affected
5. Pupil — the hole in the middle of the iris; appears black because most of the light entering it is absorbed by the tissues inside the eye
6. Retina — light-sensitive nerve tissue in the eye that converts images from the eye's optical system into electrical impulses that are sent along the optic nerve to the brain
7. Sclera — the tough, white, outer layer (coat) of the eyeball that, along with the cornea, protects the eyeball
8. Sensation — a perception associated with stimulation of a sense organ or a specific body condition; an indefinite generalized body feeling
9. Taste bud — a sense organ found primarily on the tongue's upper surface, consisting of small flask-shaped groups of cells

Unit 9: Respiratory System

1. Alveolus — tiny spherical air exchange sacs in the lung, located at the ends of the smallest airways (bronchiole); surrounded by capillaries, which are the blood vessels bringing blood into the interior of the lung that is depleted of oxygen
2. Breathing — the act or process of respiration
3. Bronchus — a large air passage that leads from the trachea (windpipe) to the lung
4. Homeostasis — state of equilibrium in the body with respect to functions, composition of fluids, and tissues
5. Larynx — valve structure between the trachea (windpipe) and the pharynx (the upper throat) that is the primary organ of voice production
6. Pharynx — space behind the mouth that serves as a passage for food from the mouth to the esophagus and for air from the nose and mouth to the larynx
7. Respiration — process of life in which oxygen is used to oxidize organic fuel molecules, providing a source of energy, carbon dioxide, and water; consists of movement of air into and out of the lungs, the exchange of gases with blood, the transportation of gases in the blood, and gas exchange between the blood and the tissues
8. Trachea — the windpipe or tube that brings air from the larynx to the bronchial tubes

Unit 10: Digestive System

1. Bile — a digestive juice secreted by the liver and stored in the gallbladder; aids in the digestion of fats
2. Carbohydrate — mainly sugars and starches; together constituting one of the three principal types of nutrients used as energy sources (calories) by the body
3. Chyme — digested content of the stomach released for further digestion in the small intestine
4. Digestion — chemical and mechanical breakdown of food into nutrients
5. Enzymes — proteins that act as a catalyst in mediating and speeding a specific chemical reaction
6. Fat — along with protein and carbohydrate, one of the three nutrients used as energy sources by the body; energy produced by fat is nine calories per gram
7. Hormone — a chemical substance produced in the body that controls and regulates the activity of certain cells or organs
8. Hydrochloric acid — acid made in the stomach that works with pepsin and other enzymes to break down proteins
9. Mucus — a thick, slippery fluid produced by the membranes that line certain organs of the body, including the nose, mouth, throat, and vagina
10. Nutrients — a chemical compound (such as protein, fat, carbohydrate, vitamin, or mineral) that makes up foods; used by the body to function and grow
11. Peristaltic waves — waves of contraction and relaxation moving along a tube; propel food along the digestive tube
12. Protein — a molecule composed of a long chain of amino acids; the principal constituent of cellular material; serves as enzymes, hormones, structural elements, and antibodies

Unit 11: Urinary System

1. Acidosis — excessive acidity of body fluids due to accumulation of acids as may happen in diabetes or kidney disease
2. Aldosterone — a hormone secreted by the adrenal cortex that affects blood pressure and saline balance
3. Alkalosis — a condition in which the blood has a lower hydrogen ion concentration than normal and an increased pH
4. Antidiuretic hormone (ADH) — a peptide hormone produced by the hypothalamus and stored in the posterior part of the pituitary gland; acts on the kidneys, concentrating the urine by promoting the reabsorption of water from the cortical collecting duct
5. Micturition — urinating or voiding
6. Nephron — the working units of the kidney that remove waste and extra fluids from the blood; each kidney is made of approximately 1 million nephrons
7. Renin-angiotensin system — a hormone system that helps regulate long-term blood pressure and blood volume in the body
8. Urine — the waste products filtered from the blood and combined with excess water by the kidneys

Unit 12: Endocrine System

1. Endocrine glands — glands in the body, such as the adrenal, that secrete hormones (chemical messengers) directly into the bloodstream
2. Endocrine system — a system of ductless glands that regulates bodily functions via hormones secreted into the bloodstream
3. Exocrine system — a system composed of glands that secrete their products via a duct — as opposed to endocrine glands that release their products directly into the circulatory system via the capillary network; typical exocrine glands include sweat glands, salivary glands, and many glands of the digestive system
4. Steroid — member of a large family of structurally similar lipid substances; steroid molecules have a basic skeleton consisting of four interconnected carbon rings; different classes of steroids have different functions; all the natural sex hormones are steroids; anabolic steroids increase muscle mass; anti-inflammatory steroids (or corticosteroids) can reduce swelling, pain, and other manifestations of inflammation
5. Stress — tension; a state of mental, physical, or emotional strain or suspense

Unit 13: Reproductive System

1. Blastocyte — the advanced stage of the pre-embryo five days after fertilization
2. Fertility — the ability of people or animals to produce healthy offspring in abundance; term usually applied to females, but increasingly applied to males as well as the common understanding of reproductive mechanisms increases and the importance of the male role is better known
3. Fertilization — the union of sperm and egg, which marks conception and the beginning of a pregnancy
4. Fraternal twins — twins produced by the simultaneous fertilization of two egg cells and who therefore share only on average 50 percent of their genes, just like other siblings; also called *dizygotic twins*
5. Hormone replacement therapy — the use of hormone preparations to treat hormone deficiency states; in women, the administration of estrogen (usually in combination with progestin, or combination hormone therapy) for the treatment of menopausal symptoms
6. Infertility — the inability to conceive or give live birth to offspring
7. Libido — the natural desire for sexual intercourse
8. Menstrual cycle — the endometrium is shed during menstruation; it then regrows, thickens, is maintained until ovulation, and is then shed again at the next menstruation; average length of the cycle, from the first day of bleeding of one cycle to the first of another, is 28 days; the length and pattern of the cycle vary greatly among women
9. Ovarian follicle — a small, fluid-filled structure in which the eggs develop
10. Ovary — one of a pair of female reproductive glands in which the ova, or eggs, are formed; located in the pelvis, one on each side of the uterus
11. Pituitary gland — a small gland in the brain, located just beneath the hypothalamus, that secretes follicle-stimulating hormone and luteinizing hormone, which stimulate egg maturation and hormone production by the ovary
12. Reproduction — a biological process by which organisms create descendants through the combination of genetic material; these organisms have two different adult sexes, male and female; new individuals are produced by the fusion of haploid gametes
13. Sperm — the male gamete; a haploid cell carried in fluid called *semen* that is capable of fertilizing an egg cell
14. STD — sexually transmitted disease
15. Testes — pair of male sex organs that lie within the scrotum and produce sperm and the male sex hormone, testosterone
16. Uterus — a thick, pear-shaped organ located in the abdominal cavity of women; lined with a layer of cells (endometrium) that respond to the varying hormonal stimulation of the menstrual cycle; holds and nourishes the developing fetus during pregnancy; at childbirth, its muscles contract and force the infant out of the mother's body
17. Vagina — the muscular canal extending from the uterus to the exterior of the body; also called the *birth canal*

Unit 14: Career and Technical Student Organizations (SkillsUSA/HOSA)

1. Assess — to determine the value, significance, or extent; to judge
2. Assessment — a tool used to determine value, significance, or extent
3. Behavior — the actions one takes; how one conducts oneself
4. Business meeting skills — the ability for individuals who share a common ground (occupational, work, trade, or organizational) to conduct a methodical and systematic meeting
5. Career — a chosen pursuit; the general course of progression of one's working life
6. Competency — the knowledge that enables one to comprehend and complete a task
7. Critique — a critical review or commentary
8. Cultural diversity — integrated existence of ethnic groups based on their values, beliefs, and behavior patterns (social, educational, economic, religious, and artistic values)
9. Customer — one who buys goods or services
10. Equity issue — a point of matter affecting the justice and fairness for all concerned
11. Expectation — eager anticipation; to look forward to the probable occurrence or appearance of something
12. Government — the agency or apparatus through which a governing individual or body functions and exercises authority
13. Image — the public's opinion or concept of something
14. Interview — a formal, in-person meeting in which the assessment of the qualifications of an applicant is determined
15. Job application — a form or document used by an employer when hiring prospective employees
16. Journal — a personal record of occurrences, experiences, or reflections kept on a regular basis
17. Management — the person or people who control or direct a business or other enterprise
18. Mentor — a wise or trusted counselor or teacher
19. Organizational chart — a chart that reflects the structure through which individuals cooperate systematically to conduct business
20. Parliamentary procedure — a body of rules governing a meeting

- 21. Portfolio — a portable case for holding materials — such as photographs, drawings, or other materials — that represent a person's work
- 22. Presentation — a performance; a formal introduction; the process of offering for consideration or display
- 23. Professional organization — a service provider utilizing a business relationship that allows outsourcing of human resources tasks, mainly for small to mid-sized businesses that do not have the need or resources for a dedicated human resources department; the concept is virtually unknown outside the United States
- 24. Résumé — a brief account of one's professional or work experience and qualifications often submitted with a job application
- 25. Self-motivation — to take action, move forward of one's own volition
- 26. Short-term goals — goals or targets that are reachable within a short period of time
- 27. Stress — an extreme pressure, strain, or difficulty
- 28. Task — a function to be performed
- 29. Trade union — a labor union, especially one limited in membership to people in the same trade